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NINE HEURISTICS FOR INFORMATION USABILITY

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1. INTRODUCTION

Introduced below are nine generative heuristics for maximizing the usefulness of information. The heuristics are a development by the author of those designed by Vesa Purho of Nokia (as a member of the Society for Technical Communication SIG on Usability) for assessing 'Documentation' (Purho, 2000).

By *documentation* is meant the information that accompanies a product (e.g. user instructions, maintenance instructions, and so on). The Purho heuristics were inspired by a similar ten-point method for evaluating the usability of graphical interfaces (Nielsen, 1994)) that is widely cited in 'information architecture' and 'information engineering' circles.

This developed version is an attempt at specialization for general documented information, irrespective of the medium in which it is delivered (document, simulation, video, etc) or of its intended use.

The purpose of the exercise (apart from providing a new basis for good practice in the generation of information) is to provide a rationale for the information 'usability' criteria developed for use as one of the information properties or characteristics to be assessed in the formal process of information evaluation.

The definition proposed for Information Usability by Darlington, et al. (2012) is based on one for the usability of artefacts in ISO 9241 (ISO, 2006) which concerns the ergonomics of human-system interaction. Within this standard can be found a normative definition for usability of artefacts thus:

'The extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use.'

This definition has been specialized for information itself to:

'The extent to which the information can be used to achieve a person's intended goal(s) with effectiveness, efficiency or satisfaction.'

It is this definition that the authors have derived for 'usability of information'. It should be noted that the ultimate conjunction has been changed from 'and' to 'or' since in the authors' view it is not necessary to usability that all three requirements are satisfied at the same time.

The nine heuristics are now given together with explanatory examples.

2. THE NINE HEURISTICS FOR MAXIMIZING INFORMATION USABILITY

1. Match between the information and the real world

The information should be couched in the user's 'language', using familiar words, phrases, and concepts, which are appropriate to the task, activity or function for which the information is intended. It should follow real-world conventions, making information appear in a natural and logical order.

Example:

A fault diagnosis flow chart for trouble-shooting a domestic boiler fault by a home owner would use different (although perhaps intersecting) terms and descriptions to that found in one used by a central heating technician. The first might be ordered according to likelihood of failure cause, the second according to test equipment use.

2. Match between the information and the physical artefact

The terms used for describing things, including materials, components, products and so on should be those conventionally used for them in the prevailing usage setting. Where this setting is a novel one, it may be necessary for clarity to define the terms.

Example:

The terms used in butchery to describe the components of a carcass are different from those used for the same items in a live animal. A sculptor describing casting a horse in six pieces, might borrow terms from both vocabularies to describe arbitrarily different elements.

3. Purposeful information items

If the information is provided in a set of documents or information items, the purpose of and relationship between each type of document or information item should be clear with respect to the use setting. The media, representation and the level of detail should be selected so that users get the information they need in the form they need.

Example:

Manuals 2 & 3 are to be used together for Task 2. Checklist A contains an aide memoire of the routine steps carried out in Manuals 2 & 3. The titling/sub-titling of the documents might make this more or less explicit; the physical items might be packaged or colour-coded together, and so on. Checklist A might be provided in addition to Manuals 2 & 3 to fulfil the knowledge requirements referred to in Heuristic 4.

4. Support for different users

The information should support the user given the knowledge of the domain necessary for the task. Where different knowledge might be expected from different users, information should be supplied separately or structured in such a way that information redundant to one type of user is either hidden (electronic documents) or easily disregarded. In electronic documents underlying data should ideally be preserved in the document. Quick reference information for expert users should be available.

Example:

Refer to the example given for Heuristic 3.

5. Effective information design

Information must be presented in a way that it is easily located and understood by the user and best suited to the information to be imparted. The structure of the information item and the mixing of media should be balanced accordingly.

Example:

The modular organization of structure conventionally adopted for, say, books, which allows the information item to be decomposed into logical parts of different sizes is an example of this. This approach when combined with conventional uses of heading content and typography assist in finding information easily. In contrast, a spread sheet conveying financial information on sales might have a sheet by sheet break-down based on calendar months, with a chart collating the information visually for the whole year.

6. Support for various methods for searching Information

Different strategies for finding information – to suit different search styles – should be supported, using such things as information and document structuring, contents tables, indexes, meta-data, hyperlinking, annotation and visualization, etc.

7. Task orientation

Where information supports a task it should be structured around the task that is to be done - in the conditions in which it will be performed - and in the detail that is appropriate for the task.

Example:

Route finding between points A and B might be supported best by a) a 4 miles-to-the-inch road map for a family outing in the car or b) a 1:250,000 co-ordinate waypoint display if A is the home airfield and B is the lunch destination.

8. Consistency and standards

Terminology, structure and editorial style should, where possible, be consistent within and across documented information and - as appropriate - conform to local or global documentation standards and procedures published for this purpose.

Example:

A user's manual for a company's product has been written for distribution in its overseas English-speaking markets. To aid understanding, a simplified English vocabulary has been adopted, in accordance with the originating company's policy for its documentation. The user guide has been planned and designed according to the company's own in-house standard for documents of this sort.

9. Help in using documentation

Information provided in different forms but which logically belongs together should be organized as an actual or virtual set such as to promote the efficiency, effectiveness and satisfaction (ISO 9241) of carrying out the associated tasks, activities and functions for which the information is provided. Where necessary, information explaining the use of the information item set should be provided, together with the navigation and search facilities necessary for easy information retrieval and re-use and re-purposing¹.

¹ See Darlington, et al., 2010 for an exposition of these terms

3. REFERENCES

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